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PATENT SPECIFICATION



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546,813

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PROVISIONAL SPECIFICATION

Improved Support for Fire Hose

I, FREDERICK WILLIAM BURT, of St. Johns, Avon Road, Devizes, Wiltshire, British Subject by birth, do hereby declare the nature of this invention to be as follows:—

PRINCIPLE EMPLOYED.

To use the water reaction to cause pressure through a supporting frame on to, at high angles, the hose; giving the hose a reasonable grip on the ground; and at low angles, on to a prong or prongs, which grip in place of the hose. The frame to be controlled by an insulated handle.

PURPOSES OF THE DEVICE.

To reduce the number of branchmen and the fatigue and danger attendant on their work, especially in cold weather.

CONSTRUCTIONAL DETAILS

It consists of two parts, namely a supporting frame and a reversible control handle. The supporting frame consists of a length of weldable tube bent to a suitable radius and the ends of which form an angle of 90 degrees; a steel bar extending from the top supports the branch through a strap; below this a strong extension fitted with two U pieces is attached to the tube for the purpose of holding the lugs and carrying reaction pressure, into the frame; below this a heavy safety strap is fitted; and below again and continuing around the bent tube are three semi-circular hose guides; of flat steel, each fitted with two prongs as shown in drawing.

The reversible handle is constructed of similar quality tube, fits on the rear end of frame, and is bent a suitable number of degrees out of straight near this joining point. By releasing its attachment pin, it can be turned through an angle of 180 degrees and reset, thus altering the handle angle relative to the jet angle by twice

the amount the handle is bent out of straight. Suitable handle positions for "high elevation jets" and "low elevation jets" can thus be obtained and the handle can be removed for carrying or storage purposes. It is fitted with an insulated covering.

TO USE THE DEVICE.

No water—two men—hose and branch laid ready. Holding handle upright, move frame over branch so that lugs fit in U pieces. Pull handle down and branch will rise; connect straps. When waiting for water, place one foot on hose and press forward on handle. When water is on, re-adjust safety strap; then leave in charge of one man.

Water on—two men. Lower branch to ground temporarily and fit as before.

To reverse handle—water on—one man. Lower branch to ground firmly, place one foot heavily on main frame behind safety strap, remove pin, reverse handle, replace pin, remove foot, raise branch and continue.

SLIP.

This is unlikely on most surfaces, whatever the rise-fall or lateral angle may be. The use of a heavy mat would be helpful on surfaces of a deep soft nature or where damage to hose would be likely.

STORAGE.

To be stored handles downwards, prongs to wall, to avoid damage to straps, which must be renewed immediately they show signs of damage or weakness.

HOSE.

Preferably rubber lined.

80

Dated the 5th day of September, 1941.

F. W. BURT.

COMPLETE SPECIFICATION

Improved Support for Fire Hose

I, FREDERICK WILLIAM BURT, of "St. Johns", Avon Road, Devizes, in the County of Wiltshire, and a British Subject by birth, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particu-

larly described and ascertained in and by the following statement:—

PRINCIPLES EMPLOYED.

To use the water-reaction pressure, with the addition of a high percentage of the weight of the device itself, to cause pres-

[Price 1/-]

sure through a supporting frame, on to, at high jet angles, the hose, giving the hose a reasonable grip on the ground; and at low jet angles, on to a prong or prongs, 5 which then grips in place of the hose.

PURPOSES OF THE DEVICE.

To allow the branch, coupling and hose immediately adjacent, instead of being held by hand, to be supported in a frame 10 controlled by a handle, in which frame it is lifted a minimum space from the ground and directed to required elevation or lateral angle, the weights and strains being taken almost to a full percentage by 15 the ground, when the device is used for any jet of reasonable size; and thus its main purpose is to reduce the number of branchmen and the fatigue and danger attendant on their work, especially in 20 cold weather.

CONSTRUCTION OF THE DEVICE.

The device is made in two parts, namely the branch, coupling and hose supporting frame, previously mentioned, and its two 25 position control handle.

The following paragraph describes the branch, coupling and hose supporting frame, and bearing in mind the great variety of positions possible, with this 30 frame, when the device is in actual use, the description is of the frame as it would be seen from its rear, in a position similar to that necessary for the device to allow a jet of 90 degrees elevation, not accompanied by any lateral angle, to be thrown. This branch, coupling and hose supporting frame is made of a length of weldable steel tube, of suitable gauge and diameter, bent to a suitable radius, the ends forming 35 between them an angle of 90 degrees and on this tube attachments are welded. One arm of this tube is assumed to be parallel with, but only a small space from the ground, the end of this arm being considered the rear of the tube, the end of the other arm facing upwards, and the face of this other arm, most remote from the rear, being considered the front of the tube. A steel bar of suitable diameter and length is 40 welded into the top end of this tube and has welded at its upper end, and facing forward, a curved strap rivet plate made of flat strip steel, bent on the flat and length about one third the circumference 45 of a circle, and of curvature to fit average branches, and to support same at a position on the branch, a suitable distance from the main coupling holder. The steel bar is bent forward slightly to avoid 50 front pull on strap, which may otherwise occur owing to the smaller diameter of the branch as compared with the coupling. This strap is attached to the plate mentioned by suitable rivets and is of suitable 55 length and material to properly support 60

and hold the branch. Below this strap, immediately above the top end of the curved tube, and passing behind, and welded to, the bar extending from same, is a strong extension, made of flat strip 70 steel of suitable strength, so bent sharply on the flat that it has two arms of equal length at approximately 90 degrees to one another, and the curvature at its bend suitable to the diameter of the bar to 75 which it is welded. This is welded in such a position that its two arms face forwards and outwards at 45 degrees each side of an imaginary centre line, as seen from above. As seen from the side, these 80 arms would be square to the forward arm of the tube. On the ends of these arms, in line with one another, are welded two U pieces made of flat strip steel, of suitable 85 strength, bent on the flat to suitable radius and welded in line with one another to the ends of the arms previously mentioned, to take the lugs of the female hose coupling, and suitably spaced between one another to take the body of the female hose 90 coupling, the open ends of these U pieces being uppermost. Below this extension and on the front of the curved tube is welded a second strap rivet plate, bent on the flat, facing forward, of curvature to fit standard size hose, of substantial dimensions, and fitted, by means of suitable rivets, with a heavy hose strap, of suitable length and material, to firmly hold the hose, when charged with water, in 95 place. Below again, and continuing around the curved tube are welded three semi-circular hose guides, each made of flat strip steel, of suitable dimensions, which is bent on the flat to be a very free 100 fit on hose. The curved strap rivet plate and these three hose guides around the front and underside of the tube are so welded, that imaginary centre lines through each would meet at the 105 imaginary centre of the quarter circle to which the tube is bent, and also so that, were the two ends of each to be joined by an imaginary line, such lines would be at right angles to the tube, as seen from above. The front hose guide is welded to the tube at a position somewhat forward of half way along the curvature of the latter: and the strap rivet plate in a suitable position between this position and where the 110 arms, previously mentioned, are attached. The rear hose guide is welded in a position where the curved tube commences to be extended straight, this extension being 115 to allow the attachment of the operating handle. The centre hose guide is welded in position approximately half way between the other two. The front hose guide has long prongs of equal length, one 120 on each side, facing away from any jet 125 130

- angle by the cutting of the steel at a suitable angle, and the ends of these are also bent outwards a suitable and equal number of degrees. Thus both prongs would hold in the ground, should a low elevation jet, not accompanied by any lateral angle, be used; and one only should such jet be accompanied by a lateral angle. These prongs are of a length which would cause the hose to be lifted well clear of the ground should a very low jet be necessary, and the weight of this charged hose would then be of assistance to the prong held on ground. The second or middle guide has similar but shorter prongs, which do not touch the ground unless the jet is at a high elevation angle accompanied by a low lateral angle, when one prong only will hold in the ground. The third guide is to a semi-circle only and no prongs are necessary. The straight extension of tube beyond the rear hose guide has a hole drilled horizontally, through which a pin fits when the operating handle is fitted in position.
- The two position operating handle is constructed of similar quality tube and has at its forward end, a short length of larger tube, large and accurate enough to be a free working fit on the rear extension of the branch, coupling and hose supporting frame previously described; and at its rear end with a cross tube, which the branchman grips, the centre tube of handle being welded to this cross tube at the centre point of the latter. The centre bar of this operating handle is bent a suitable number of degrees out of true, up or down, assuming the device to be at no lateral angle, near its connecting point with the branch, coupling and hose supporting frame; so that, by removing the pin and turning the handle only, through 180 degrees, an alteration in the relative handle angle to jet angle, by twice the amount the handle is bent out of straight, can be made. Suitable handle positions for "high elevation angle jet" or "low elevation angle jet" can thus be obtained, and this arrangement, with additional hand movements, up or down, of this handle, will cover all elevation angles from 0 degrees to approximately 90 degrees without raising handle cross tube above breast height. The cross tube of this handle is fitted with 4 U hooks, 2 above and 2 below, suitably spaced, of round steel, and of suitable size, and at suitable angles to fit up under the branchman's belt, when the handle is in either of its two positions, so that his hands can be temporarily freed for any purpose, though this arrangement can only be made use of if the device is temporarily at no lateral angle. The parts of cross tube on which a grip is made are insulated.
- The handle is held in either of its positions, and is prevented from leaving the branch, coupling and hose supporting frame, by means of a pin, made from a short length of round steel of suitable diameter, which passes centrally through both the straight extension at the rear of the curved tube of the branch, coupling and hose supporting frame, and the larger tube on front end of handle which is a working fit on this extension, and the holes in these are so drilled that the pin is a satisfactory fit with the handle in either of its positions. The pin has a blunt point at one end, with an arm of flat steel at its other end, this arm being at 90 degrees to the pin. This pin passes through horizontally, assuming the device to be at no lateral angle, and is put in place from the right side. The flat arm of this pin is then dropped into a safety holder, which is a small rectangular steel frame, greatest in its height, that has a cut through its top bar, of sufficient width to allow the pin arm to pass through. This frame is on the right side of the device and is welded to the curved tube of the branch, coupling and hose supporting frame, and to the rear hose guide at a position above the latter, and has a hole drilled, near the cut before mentioned, through which the end link of a suitable length and type of chain is passed, the other end being attached to the pin arm.
- The device generally is finished to suit fire-fighting purposes.
- To USE THE DEVICE.**
- Water off—two men—hose and branch already connected and on ground. Attach two parts of device in "high angle" or "low angle" position as appears to be required. Hold handle approximately upright, move over branch so that U pieces on device fit on lugs of coupling. Lower handle and branch will rise; connect straps. While waiting for water, place one foot firmly on hose to lessen initial kick on device. When water is on, re-adjust hose strap, then leave in charge of one man.
- GENERAL INSTRUCTIONS FOR BRANCHMEN.**
- Do not raise handle above breast height as control decreases above this position. but reverse handle if a lower-elevation jet is required.
- Check low angle skid, if any, by raising jet.
- Do not twist the handle to obtain a lateral angle, but move over to right or left in the form of an arc of a circle.
- Water on—two men—lower branch temporarily and fit device as before.
- To reverse handle under pressure—one

man. Lower branch firmly until front prongs touch ground, place one foot heavily behind main frame to prevent slip or movement, remove pin, revolve handle to its other position, replace pin, remove foot and continue.

A heavy mat, or part of packing case, and the like, would be useful on a surface of a deep soft nature, in which the device 10 may "burrow", or very hard nature, in which the prongs may not hold, or where damage to hose would be likely, as on a road covered with broken glass.

STORAGE.

15 To be stored handles downwards, to prevent damage to straps. The connection between the two parts to be greased occasionally.

THE ACCOMPANYING DRAWINGS.

20 The main parts of the device, as now completely described, are shown and marked, as follows, on the accompanying drawings.

THE BRANCH, COUPLING AND HOSE SUPPORT FRAME.

25 The curved tube at *a* in each of Figs. 1, 3 and 4; the extension arms on the front of this frame at *b* in each of Figs. 1, 3 and 4; the U-pieces, into 30 which the lugs of the female coupling fit, at *c* in Figs. 1, 3 and 4; the front hose guide with its long prongs at *d* in each of Figs. 1, 3, 4 and 5; the middle guide with 35 its short prongs at *e* in each of Figs. 1, 3, 4 and 6; the pin arm safety holder at *f* in each of Figs. 1, 2, 3 and 4; and the pin itself at *g* in Fig. 2.

THE OPERATING HANDLE.

The short length of larger tube, at its 40 front end, at *j* in each of Figs. 1, 3 and 4; the bend in the centre tube of handle, near the point of connection with supporting frame, at *g*, in each of Figs. 1, 3 and 4; and the belt hooks on the cross tube of handle 45 at *h* in each of Figs. 1, 3 and 4.

The accompanying drawings illustrate 50 views of the device and parts of the device. Fig. 1 shows a perspective view of the device complete, excepting the pin and pin arm holder, which for drawing purposes are shown as an enlargement in Fig. 2, though the position of the arm holder is shown by dotted lines in Fig. 1. The handle in Fig. 1 is shown in the high elevation angle jet position and the figure shows the appearance of the device and assumes it to be supported in this position, but without coupling or branch being attached. Fig. 3 shows a side elevation 55 of the device with the handle in a low elevation angle jet position, with coupling.

60 hose and branch in place and under pressure. For drawing purposes the pin and the two straps are not shown. It will be noted how the prong on the front hose guide is holding in the ground, and the clearance between hose and ground will also be noted.

Fig. 4 shows a side elevation of the device with the handle in a high elevation 65 angle jet position, with coupling, hose and branch in position and under pressure. It will be noted that the hose rests on the ground as a car tyre, and no part in the device itself touches the ground, the rear- 70 tension pressure, plus the effort required to flex the hose being amply sufficient to ensure a grip on most surfaces at high 75 elevation angles.

Fig. 5 is a part front drawing of the 80 device and shows the action of the prongs on the front guide when the device is used for a jet of a low elevation angle accompanied by a lateral angle.

Fig. 6 is a part drawing, and shows the 85 action of the middle guide prongs, when the device is used for a jet of high elevation angle accompanied by a fairly low lateral angle.

Having now particularly described and 90 ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. A support for fire hose comprising a 95 curved steel tubular member to which are secured strap members for engaging the hose, a two-armed member provided with U-shaped end pieces adapted to engage 100 lugs on the hose coupling a plurality of curved guide members for the hose, some of which are provided with ground engaging prongs, and a detachable and adjustable operating handle which is bent near to its point of attachment to the said tubu- 105 lar member.

2. A support for fire hose, as claimed in claim 1, in which the required relative position of the tubular member and its operating handle is maintained by a 110 removable pin, attached to the former by chain, and a frame, adapted to engage the pin arm, secured to the former.

3. Combined with the support for fire hose, as claimed in Claims 1 and 2, the 115 addition of a body attachment comprising U-shaped hooks, adapted to engage the branchman's belt, with the operating handle in either of its positions, secured to the cross bar of said handle.

Dated the 9th day of March, 1942.

F. W. BURT.

546,813 COMPLETE SPECIFICATION

SHEET 1

[This Drawing is a reproduction of the Original on a reduced scale.]

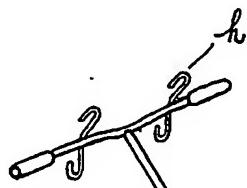


FIG. 1.

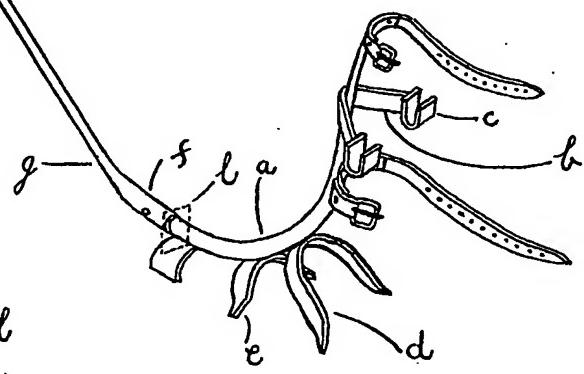


FIG. 2.

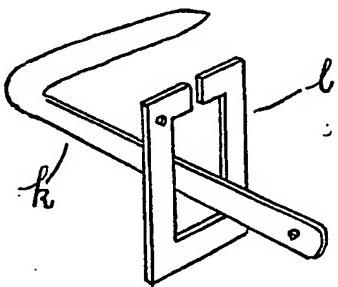
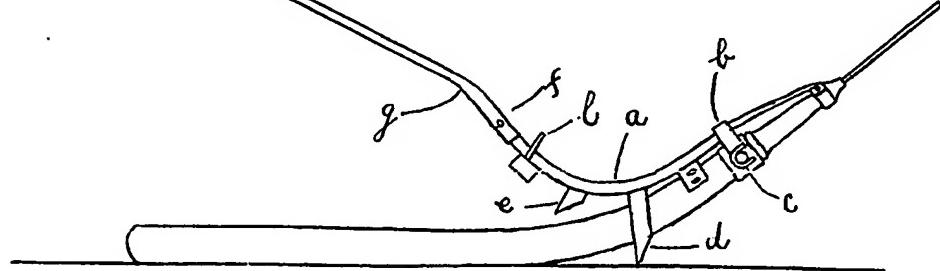
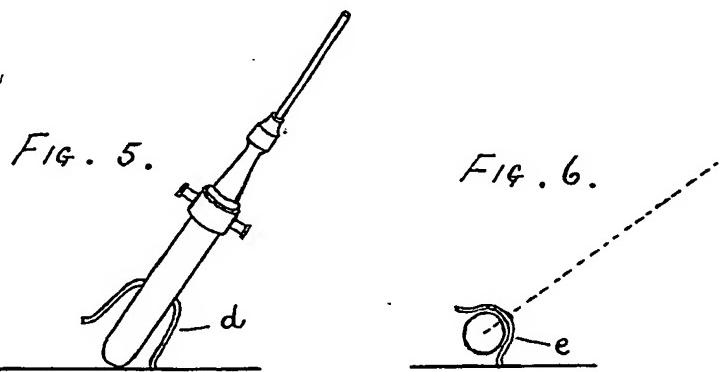
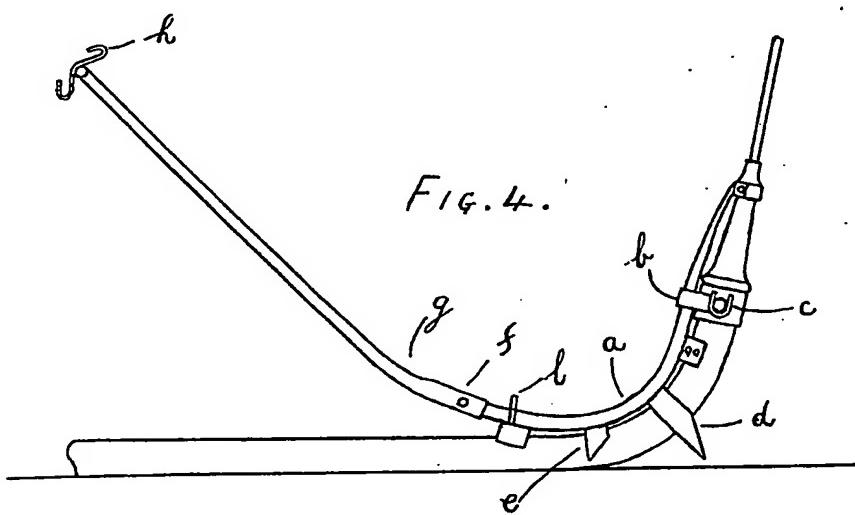


FIG. 3.





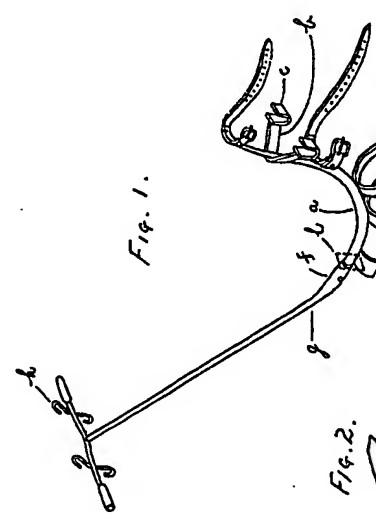


FIG. 1.

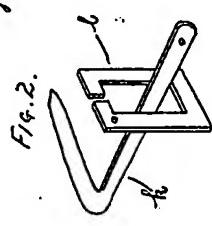


FIG. 2.

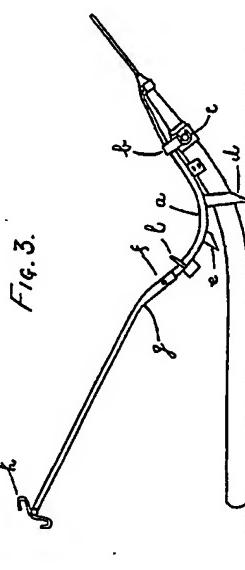


FIG. 3.

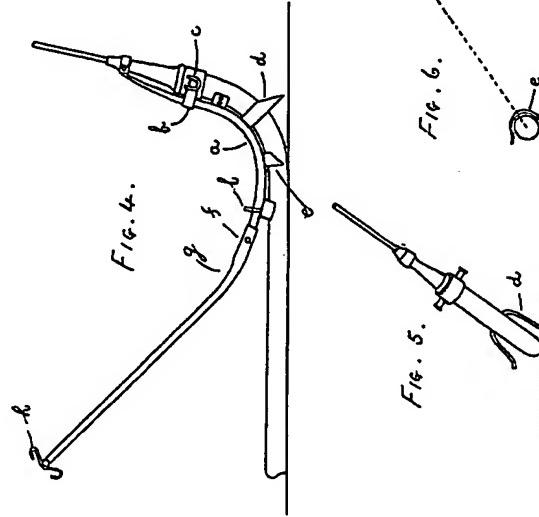


FIG. 4.



FIG. 5.

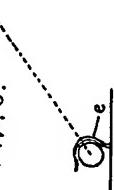


FIG. 6.